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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/503,925	02/14/2000	Jae-Yoel Kim	678-456(P9158)	7284

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EXAMINER
GEORGE, KEITH M

ART UNIT	PAPER NUMBER
2663	7

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 July 2003</u> .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-30</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on <u>17 July 2003</u> is: a)☒ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☒ All b)☐ Some * c)☐ None of:

   1.☒ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-3, 5-7, 9-14, 16-18, 20-22 and 24-29 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Gilhousen, U.S. Patent 5,751,761, hereinafter Gilhousen, in view of

Minn et al., U.S. Patent 6,088,347, hereinafter Minn.

3.   Referring to claims 1, 5, 16 and 20, Gilhousen teaches that signals are communicated

between a cell-site and mobile units using direct sequence spread spectrum communication

signals and that code assignments are made on the basis of channel data rates in a manner which

results in improved utilization of the available frequency spectrum (column 3, lines 19-21 and

26-28). Gilhousen goes on to teach that if orthogonality is to be maintained between a set of user

channels assigned Walsh codes, the codes associated with branch-connected nodes in the Walsh

tree may not be simultaneously utilized. That is, neither longer code sequences recursively

derived from a give code nor shorter code sequences from which the give code was recursively

derived, may be assigned to other communication channels when the give code is in use (column

11, lines 29-37). Gilhousen also teaches that the cell controller would maintain an ASSIGNED

list of the set of codes already assigned to particular user channels and would further include a

separate "BUSY" list having an entry for each possible Walsh code. Each of the entries in the

BUSY list corresponding to codes currently included in the ASSIGNED list would then be marked as being busy. In addition, all entries within the BUSY list corresponding to codes recursively related to those indicated as being busy would also be marked as being busy. Next, the BUSY list would be searched for an available code having a chip length appropriate for the data rate of the requesting channel. Upon identification of a code of suitable length, the controller would assign the identified code to the requesting channel (column 12, lines 20-40). Gilhousen teaches all of the above with the possible exception of explicitly stating that the Walsh codes could be associated with two CDMA communications systems. Gilhousen also does not teach that this would not be an acceptable configuration. In an explanation of Gilhousen, Minn teaches that the assignment of a parent Walsh code to a VSG-CDMA user prohibits the assignments of its derivative codes to two STD-CDMA users (column 6, lines 5-7). Minn is clearly teaching Gilhousen can be used to assign Walsh codes to two CDMA communications systems. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the teachings of Gilhousen on multiple communications systems as taught by Minn. One of ordinary skill in the art would have been motivated to do this to support higher information rates for non-voice communications by using lower dimensional Walsh codes for Walsh mapping (Minn, column 5, lines 57-60).

4.   Referring to claims 2 and 17, Gilhousen and Minn teach the device as described in claims 1 and 16 above and Gilhousen also teaches the Walsh tree representation of figure 2 set forth in table 1.

5.   Referring to claims 3 and 18, Gilhousen and Minn teach the device as described in claims 1 and 16 above and Minn also teaches that existing mobile units may be incorporated into a

variable data rate CDMA cellular system (column 19, lines 14-15). At the time the invention

was made, it would have been obvious to a person of ordinary skill in the art that if existing

mobile units that did not utilize variable data rate CDMA were used in a network that did utilize

variable data rate CDMA, it would be a requirement to identify which device is communicating

so that the appropriate signaling can be sent. One of ordinary skill in the art would have been

motivated to do this because the cell-to-mobile and mobile-to-cell links need not be capable of

accommodating an identical set of data rates (Minn, column 19, lines 8-10).

6.   Referring to claims 6, 7, 21 and 22 Gilhousen and Minn teach the device as described in

claims 5 and 20 above and Minn also teaches that IS-95 is referred to as STD-CDMA (column 4,

lines 62-64) and it is also clear that VSG-CDMA, which allows for higher data rates that STD-

CDMA is a next generation CDMA communications system.

7.   Referring to claims 9, 12, 24 and 27, Gilhousen and Minn teach the device as described

in claim 5 above and Gilhousen also teaches that when a call is initiated within the PSTN, the

controller transmits the call information to all the cell-sites in the area. The cell-sites in return

transmit a paging message within each respective coverage area that is intended for the called

recipient mobile user (column 4, line 65 – column 5, line 10).

8.   Referring to claims 10 and 25, Gilhousen and Minn teach the device as described in

claims 9 and 24 above and Gilhousen also teaches the Walsh tree representation of figure 2 set

forth in table 1.

9.   Referring to claims 11 and 26, Gilhousen and Minn teach the device as described in

claims 9 and 24 above and although they possibly fail to explicitly teach that there are multiple

paging channels it would be obvious to one of ordinary skill in the art that if multiple mobile

users would need to be contacted, it would require multiple paging channels. One of ordinary

skill in the art would have been motivated to do this in order to communicate with the correct

mobile unit.

10.   Referring to claims 13, 14, 28 and 29 Gilhousen and Minn teach the device as described

in claims 12 and 27 above and Minn also teaches that IS-95 is referred to as STD-CDMA

(column 4, lines 62-64) and it is also clear that VSG-CDMA, which allows for higher data rates

that STD-CDMA is a next generation CDMA communications system.

11.   Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gilhousen and Minn as applied to claims 1 and 16 above, and further in view of Partridge, III,

U.S. Patent 5,608,778, hereinafter Partridge. Gilhousen and Minn teach the device as described

in claim 1 above and possibly fail to mention that the mobile device should include unique

number information, although that would be a requirement in the system since communication

paths are configured between the base stations and the mobile units. Partridge teaches that a

mobile unit transmits its ESN and MIN1 string to the base station for confirmation. The base

station detects the ESN and MIN1 strings and determines therefrom the asserted identity of the

cellular telephone (column 4, lines 8-10 and lines 16-18). At the time the invention was made, it

would have been obvious to a person of ordinary skill in the art to uniquely identify each mobile

unit as taught by Partridge so that the device of Gilhousen and Minn would be able to establish a

communications path with a known device.

12.   Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gilhousen, Minn and Partridge as applied to claims 4 and 19 above, and further in view of

Tiedemann, Jr. et al., U.S. Patent 6,256,301, hereinafter Tiedemann. Gilhousen, Minn and

Partridge teach the device described in claims 4 and 19 above where they possibly fail to teach the details concerning how an orthogonal code number is selected. Tiedemann teaches a hash ID where the input information of the hash function comprises the electronic serial number of the mobile station (column 5, lines 5-8). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize the hash ID taught by Tiedemann in the device of Gilhousen, Minn and Partridge. One of ordinary skill in the art would have been motivated to do this because although not unique, the length of the hash ID is sufficient to make it extremely unlikely that more than one mobile station operating within the coverage are of a base station will generate the same hash ID and transmit the request portion of an access probe at the same time (Tiedemann, column 4, lines 14-19).

13.   Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen and Minn as applied to claims 11 and 26 above, and further in view of Tiedemann. Gilhousen and Minn teach the device described in claims 4 and 19 above where they possibly fail to teach the details concerning how an orthogonal code number is selected. Tiedemann teaches a hash ID where the input information of the hash function comprises the electronic serial number of the mobile station (column 5, lines 5-8). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize the hash ID taught by Tiedemann in the device of Gilhousen and Minn. One of ordinary skill in the art would have been motivated to do this because although not unique, the length of the hash ID is sufficient to make it extremely unlikely that more than one mobile station operating within the coverage are of a base station will generate the same hash ID and transmit the request portion of an access probe at the same time (Tiedemann, column 4, lines 14-19).

Response to Arguments

14.   Applicant's arguments filed 17 July 2003 have been fully considered but they are not

persuasive. On page 2 of the Response, applicant argues that there are several elements that

distinguish the independent claims over the cited references. The applicant then lists three

elements of the claims without any further explanation as to how these elements distinguish from

the prior art. Further explanation of the above stated rejections will be provided to show that

Gilhousen and Minn have taught these claim limitations.

15.   In response to the limitation that the orthogonal code numbers that are stored are

orthogonal code numbers that cannot maintain orthogonality due to an orthogonal code that the

forward common channel uses at a maximum data rate, Gilhousen has clearly taught an

ASSIGNED list of the set of codes already assigned to particular user channels, and would

further include a separate "BUSY" list having an entry for each possible Walsh code (orthogonal

code numbers stored). Each of the entries in the BUSY list corresponding to codes currently

included in the ASSIGNED list would then be marked as being busy. In addition, all entries

within the BUSY list corresponding to codes recursively related to those indicated as being busy

would also be marked as being busy (orthogonal code numbers that cannot maintain

orthogonality) (column 12, lines 20-31). Gilhousen also provides further detail to how codes are

recursively related. If orthogonality is to be maintained between a set of user channels assigned

Walsh codes, then codes associated with branch-connected nodes in the Walsh tree may not be

simultaneously utilized. That is, neither longer code sequences recursively derived from a given

code, nor shorter code sequences from which the give code was recursively derived, may be

assigned to other communication channels when the give code is in use (due to an orthogonal

code that the forward common channel uses at a maximum data rate) (column 11, lines 29-37).

It is also well known in the art that the forward common channel is simply the term used for the

paging channel in cdma2000.

16.   Applicant also states that the claim limitations indicate that a specific group of orthogonal

codes relating to the forward common channel of the first CDMA system are stored, not all non-

orthogonal codes of the system. However a limitation to not include all non-orthogonal codes of

the system does not appear in any of the independent claims.

17.   Referring to the claim limitation that the controller reads the orthogonal code numbers of

the specific group stored from the storage medium according to mobile station type information

and according to a paging message, Gilhousen has clearly that that the BUSY list would be

searched for an available code having a chip length appropriate for the data rate of the requesting

channel (mobile station type information) (column 12, lines 31-33). Gilhousen also teaches that

when a call is initiated within the PSTN, the controller transmits the call information to all the

cell-sites in the area. The cell-sites in return transmit a paging message within each respective

coverage area that is intended for the called recipient mobile user (column 4, line 65 – column 5,

line 10). It is the clear teaching of Gilhousen that when a message is sent, a Walsh code is

selected in the manner described in column 11, line 63 - column 12, line 65.

18.   Referring to the claim limitation that the controller allocates a specific forward common

channel using one of the stored orthogonal code numbers from the specific group, Gilhousen has

clearly that that upon identification of a code of suitable length, the controller would assign the

identified code (using one of the stored orthogonal code numbers) to the requesting channel

(allocate a specific forward common channel).

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

>   a.   Willey, U.S. Patent 6,072,987, teaches that in cdma2000 messages are usually
>
>   sent out on a paging channel, commonly refereed to as a Forward Common Control
>
>   Channel (F-CCCH).

20.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Keith M. George whose telephone number is 703-305-6531. The

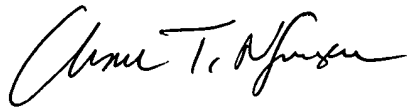examiner can normally be reached on M-Th 7:00-4:30, every other F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau T. Nguyen can be reached on 703-308-5340. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-4750.

Keith M. George
4 September 2003

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600